

What's the latest thing
in core memory products
for space vehicles,
missile guidance
systems, miniaturized
military ground support
systems . . . wherever
compact size, outstanding
reliability and operation
over wide temperature
excursions are required?

You've just described **Isodrive® Cores** and **Isodrive® Memories** manufactured by

electronic memories inc,

12621 CHADRON AVENUE • HAWTHORNE, CALIFORNIA

ISODRIVE **Core**

—55°C TO +100°C OPERATING TEMPERATURE RANGE

A 50-mil ferrite core offering excellent output signal over a temperature range of —55°C to +100°C with constant drive current.

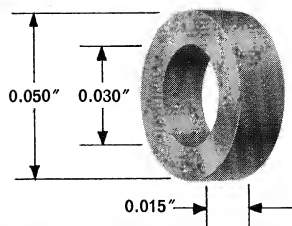
ISODRIVE **Memory**

WRITE AT —30°C, READ AT +90°C W/O COMPENSATION

A pocket-size 1440-bit core memory with an operating power requirement of 300 mw at 1 Kc with a 5-50 mw standby, depending on application.



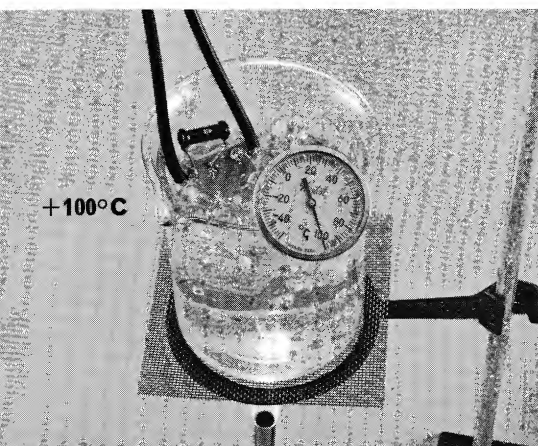
-55°C TO +100°C OPERATING TEMPERATURE RANGE



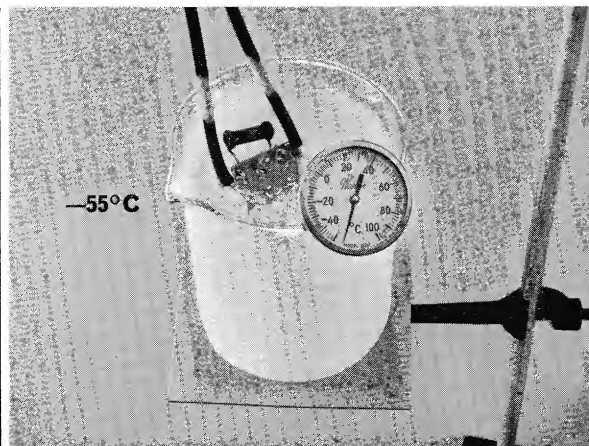
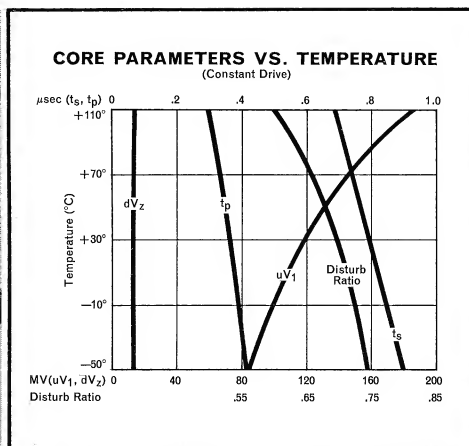
All dimensions are ± 0.002 "

ISODRIVE *Core*

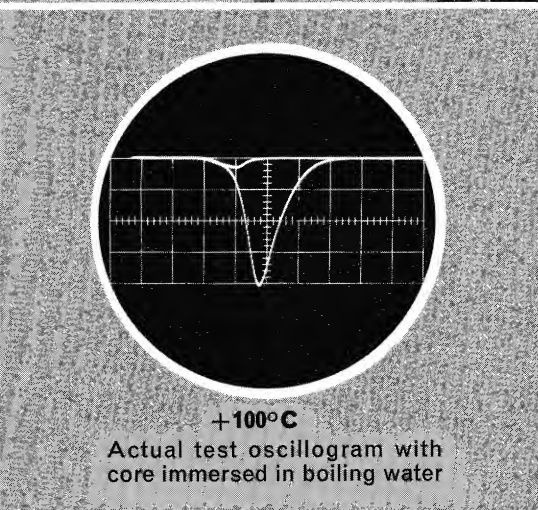
A 50-mil ferrite core offering excellent output signal over a wide temperature range with constant drive current.



+100°C

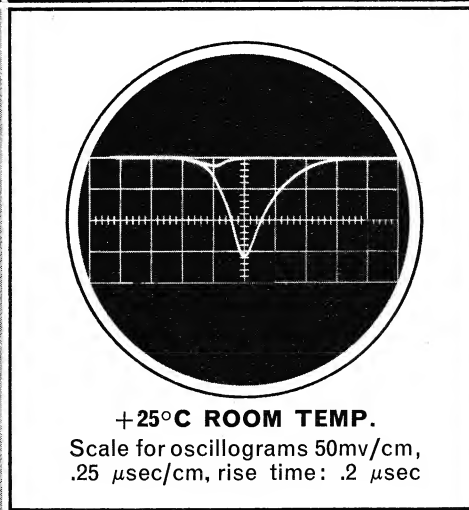


-55°C



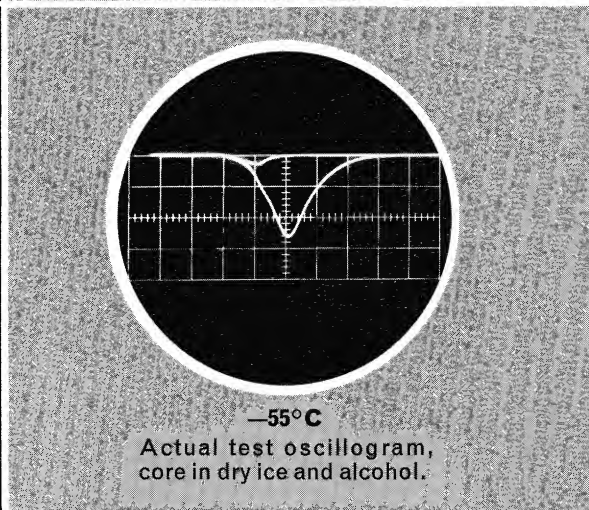
+100°C

Actual test oscillogram with core immersed in boiling water



+25°C ROOM TEMP.

Scale for oscillograms 50mv/cm, .25 $\mu\text{sec/cm}$, rise time: .2 μsec



-55°C

Actual test oscillogram, core in dry ice and alcohol.

FEATURES

Fast switching, high drive, high output. Improved disturb ratio allowing increased tolerance to drive current drift. Increased signal-to-noise ratio at sampling time. Excellent characteristics over -55°C to $+100^\circ\text{C}$ operating range without current compensating circuits.

RECOMMENDED OPERATING CONDITIONS

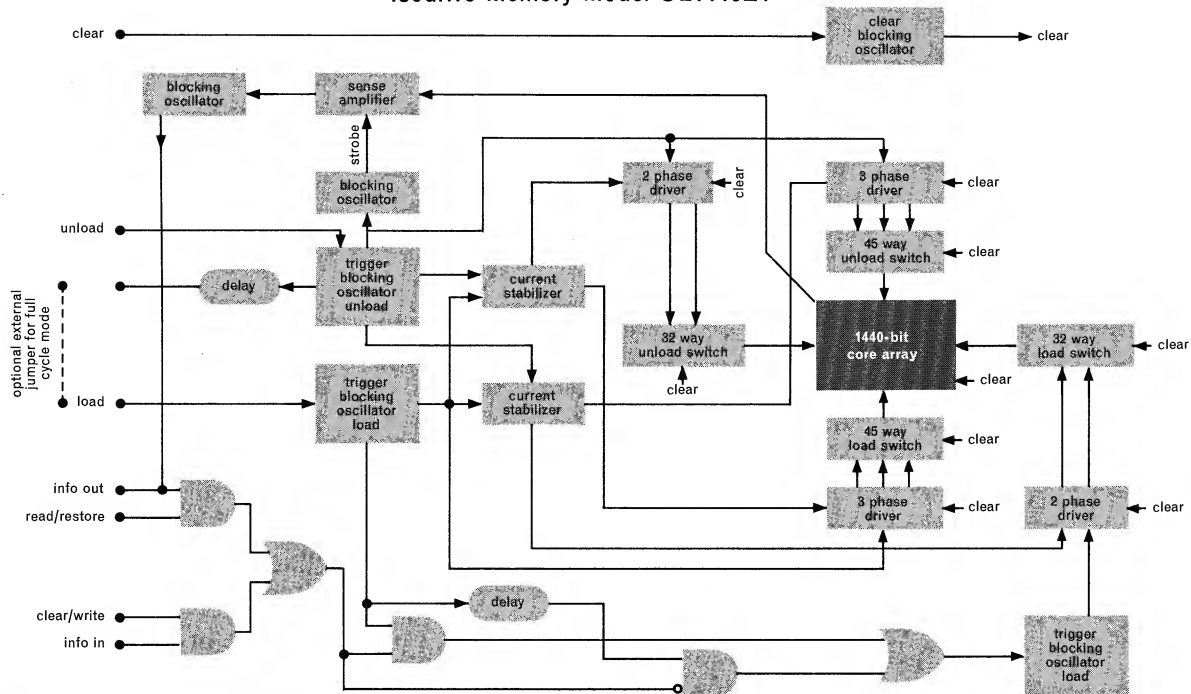
Temperature	-55°C to $+100^\circ\text{C}$
Drive Pulse ($I_r = I_w$)	1000/500 ma turns
Pulse Width (t_w)	2 μs
Pulse Rise Time (t_r)	.2 $\mu\text{s} \pm .02 \mu\text{s}$ linear
Pulse Fall Time (t_f)	.3 μs min.

TYPICAL OUTPUT SIGNALS

Temperature:	-50°C	$+25^\circ\text{C}$	$+100^\circ\text{C}$
Switching time (t_s)	0.90 μs	0.80 μs	0.70 μs
Peaking time (t_p)	0.42 μs	0.36 μs	0.30 μs
Amplitude ONE (uV_1)	85 mv	117 mv	175 mv
Amplitude ZERO (dV_z)	14 mv	14 mv	16 mv

BLOCK DIAGRAM

Isodrive Memory Model SE1440Z1



electronic memories inc.

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MEMORY CORE CHARACTERISTICS SUMMARY

TYPE	SIZE	RECOMMENDED			TYPICAL OUTPUT SIGNALS			
	(mils)	DRIVE CURRENTS @ 25°C						
			Rise	Pulse			Peak	Switch
			Time	Width	uV_1	dV_z	Time	Time
	OD/ID/ht	(ma turns)	(μ sec)	(μ sec)	(mv)	(mv)	(μ sec)	(μ sec)
COINCIDENT CURRENT								
31-103	30/20/7	580/290	0.1	0.6	58	6	0.24	0.38
31-108	30/20/7	720/360	0.1	0.6	62	5	0.21	0.39
31-112	30/20/7	500/250	0.1	0.6	60	10	0.21	0.40
51-101	50/30/15	520/260	0.15	1.0	110	15	0.32	0.65
51-106	50/30/15	500/250	0.2	1.2	90	9	0.43	0.75
51-110	50/30/15	500/250	0.2	2.0	68	8	0.52	1.02
51-119	50/30/15	400/200	0.5	2.0	90	5	0.75	1.25
51-113	50/30/15	380/190	0.2	2.0	54	8	0.65	1.35
51-111	50/30/15	350/175	0.5	3.0	59	6	0.86	1.50
81-101	80/50/25	630/315	0.2	2.0	170	15	0.52	1.04
81-104	80/50/25	400/200	0.5	5.0	55	5	1.60	3.00
WORD SELECT								
31-105	30/20/7	380/95/90	0.1	0.12 & 0.4	35	6	0.10	0.175
51-114	50/30/15	450/130/120	0.1	0.2 & 0.4	75	16	0.11	0.23
51-109	50/30/15	550/160/140	0.1	0.2 & 0.4	120	25	0.15	0.25
LITHIUM CORES (For Wide Temperature Range Applications, -65°C to + 125°C)								
XC-3009	30/20/7	670/335	0.2	1.0	58	6	0.37	0.62
XC-3010	30/20/7	540/270	0.2	1.5	38	4	0.45	0.81
ISODRIVE* CORES (For Wide Temperature Range Applications, -65°C to +125°C)								
36-101	30/20/9	700/350	0.2	1.0	44	6	0.33	0.58
TRANSFLUXOR								
101-1002 (Shmoo)	.1/.07/.015	Read 500/250 Write 380/190 Prime 350/175 Clear 800	0.2 0.2 0.2 0.2	2.0) 2.0) 2.0) 2.0)	79	20	0.37	0.59
SWITCH CORES - 100, 140 and 180 mil sizes available.								

* Registered Trademark

FERRITE CORE SPECIFICATION

COINCIDENT CURRENT
MEMORY CORE

Type 21-100

The Type 21-100 COINCIDENT CURRENT MEMORY CORE is a high drive, very fast switching core intended for use in coincident current memories in the 0.8 to 1.5 microsecond speed class. The Type 21-100 exhibits good characteristics over a temperature range of 0 to 50°C.

MECHANICAL SPECIFICATIONS:

Outside Diameter	0.022 ± 0.002 Inch
Inside Diameter	0.014 ± 0.002 Inch
Thickness	0.0055 ± 0.0005 Inch

ELECTRICAL SPECIFICATIONS:

Typical Operating Conditions

Temperature:	25°C
Drive Pulse (I)	700/350 ma
Pulse Width (t_w)	0.4 μ sec.
Pulse Rise Time (t_r)	0.05 μ sec.
Pulse Fall Time (t_f)	0.05 μ sec.

Typical Output Signals

Temperature:	25°C
Amplitude ONE (uV_1)	47 mv
Amplitude ZERO (dV_z)	4 mv
Peaking Time (t_p)	110 - 120 nanoseconds
Switching Time (t_s)	210 - 220 nanoseconds

GENERAL:

Cores are delivered 100% tested to mechanical and electrical specifications or to statistical quality level of AQL 0.015 or 6.5 as defined by MIL-STD-105C, Inspection Level II. Cores are electrically tested as defined by the Test Specifications on the next page.

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CORE TEST SPECIFICATION

COINCIDENT CURRENT MEMORY CORE

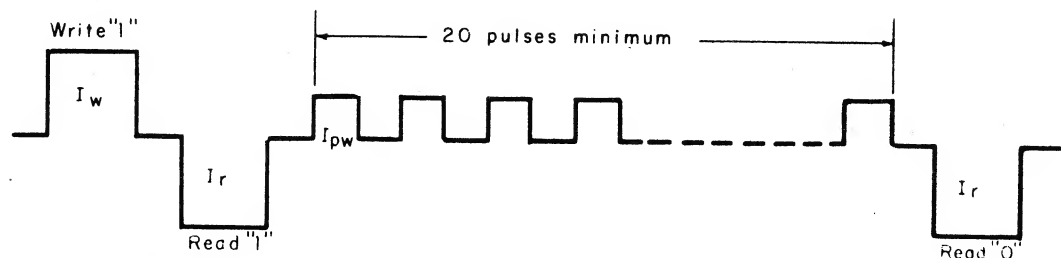
Type 21-100

ELECTRICAL TEST SPECIFICATIONS AT $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$

	Drive Pulse	t_w	t_r linear	10% to 90%
I_r	$640 \pm 6 \text{ ma}$	$0.5 \mu\text{sec.}$	$0.05 \pm .01 \mu\text{sec.}$	
I_w	$640 \pm 6 \text{ ma}$	$0.5 \mu\text{sec.}$	$0.05 \pm .01 \mu\text{sec.}$	
I_{pw}	$385 \pm 4 \text{ ma}$	$0.5 \mu\text{sec.}$	$0.2 \pm .05 \mu\text{sec.}$	Overshoot and droop 1%

Pulse Program

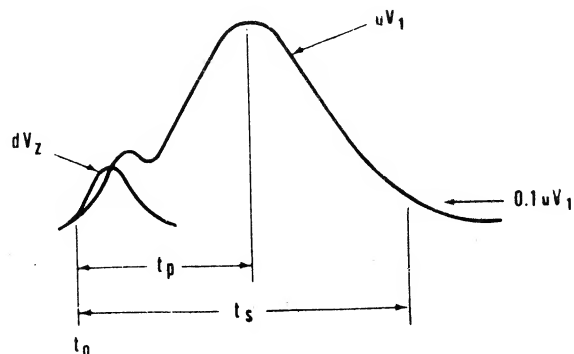
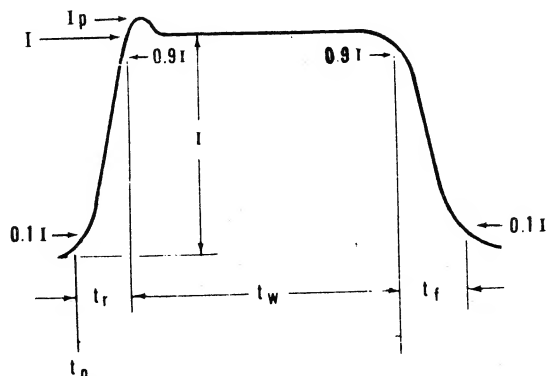
Pulse rate 20 kc



Output Test Signals

uV_1	-----	28 mv min.
dV_z	-----	8 mv
t_p	-----	$0.13 \mu\text{sec.} \pm 0.02$
t_s	-----	$0.26 \mu\text{sec. max.}$

DEFINITIONS:



electronic memories inc.

12621 CHADRON AVENUE • HAWTHORNE, CALIFORNIA • 772-5201

Thank you for your recent inquiry. The information you requested is enclosed.

We look forward to the pleasure of supplying ferrite cores, arrays and stacks, or complete memory systems to you.

Please let us know how EMI may be of further assistance to you by contacting the office nearest you.

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